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CLASS System Requirements CAR

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Version: 1.0
Printed by: btilley
Printed on: 01 April 2003

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srd1	# 1 Introduction
srd2	The National Environmental Satellite, Data, and Information Service (NESDIS) is responsible for the collection, archiving, and dissemination of environmental data collected by a variety of *in situ* and remote sensing observing systems operated by the National Oceanic and Atmospheric Administration (NOAA) and by a number of its partners [e.g., National Aeronautics and Space Administration (NASA)]. To prepare for large increases in its data holdings, NESDIS initiated the planning and development for a Comprehensive Large Array-data Stewardship System (CLASS) that provides archive and access services for these data. CLASS must be able to handle the data flow from current satellite-based systems [e.g., Polar-orbiting Operational Environmental Satellite (POES), Geostationary Operational Environmental Satellite (GOES), and Defense Meteorological Satellite Program (DMSP)], ground-based systems [e.g., Next Generation Weather Radar (NEXRAD)] and *in situ* systems [e.g., Automated Surface Observing System (ASOS)]. It must also be structured to handle the large increases in data that will come from planned satellite launches [e.g., Meteorological Operational satellites (METOP), National Polar-orbiting Operational Environmental Satellite System (NPOESS), NPOESS Preparatory Project (NPP), and Earth Observing System/Modern Operations Distributed Infrared Spectrometer ((EOS/MODIS) satellites].
srd3	This document describes the known system requirement specifications for the NOAA CLASS development as currently defined. This document does not present new requirements but instead organizes and consolidates requirements from several different systems that have been integrated to embody CLASS: The Satellite Active Archive (SAA), the GOES Active Archive, the COAST e-commerce system requirements, and the CLASS Phase One requirements. In order to ensure that all previously defined CLASS system requirements are included in this document, traceability matrices mapping requirement definitions in this document to those in source documents have been created and are maintained in the DOORS requirements management tool.
srd4	The system requirements defined in this document are based largely on experience gained through the development of the SAA, which is a successful implementation of the capabilities needed today: a user interface, automatic ingest, automatic delivery, and special services such as subscription orders, off-line search and order, and push delivery.
srd5	## 1.1 Scope
srd6	This document presents the CLASS functional and performance requirements for capabilities to archive, access, and distribute data, focusing primarily on the following seven campaigns: 1) POES (Polar-orbiting Operational Environmental Satellites for NOAA and DOD) 2) GOES (Geostationary Operational Environmental Satellites) 3) NEXRAD (NEXt generation weather RADAR) 4) EOS/MODIS (Earth Observing System/Modern Operations Distributed Infrared Spectrometer) 5) NPP (NPOESS Preparatory Project) 6) METOP (European Meteorological Operational Satellite) 7) NPOESS (National Polar-Orbiting Operational Environmental Satellite System)
srd7	## 1.2 Applicable Documents

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srd8	The following list includes documents that are the sources for the consolidated system requirements or that contain information that may have a bearing upon future CLASS requirements, design, or implementation. a) NOAA/NESDIS Enterprise Information Technology Architecture Plan b) NOAA Archive and Access Architecture c) CLASS System Architecture (July 2001) d) Satellite Active Archive System Requirements e) GOES Active Archive User requirements f) CLASS System Requirements (Phase 1 - July 2001) g) NESDIS e-commerce requirements. Sept. 2001 h) Concept of Operations for the Archive, Access, and Distribution System of CLASS (October 2002) i) Satellite Active Archive system description http://library.saa.noaa.gov j) NESDIS List of IJPS Day One Products k) Polar Operational Environmental Satellite Ground Segment Upgrade Description & Requirements For Initial Joint Polar Satellite System NO-IJ/OSD-99-0005-R0U0 l) Polar-orbiting Operational Environmental Satellite System Requirements for Initial Joint Polar System (IJPS) (RDN) NOAA-POES-IJPS/OSD-2002-0012R0UD0 m) Data Denial Implementation Plan (DDIP) for Co-operation between NOAA and EUMETSAT on an Initial Joint Polar-orbiting Operational Satellite System (IJPS) Agreement. Version 1.1 n) NPP Mission System and Operations Concept (Volume 1)GSFC 429_99_02_02 o) NPP Mission System and Operations Concept Data Dictionary (Volume 2) GSFC 429_99_02_02 p) NPP Mission Requirements Specification, Volume 1, (Level 2) GSFC 429_99_02_03 q) NPP Mission Requirements Specification, Volume 2, (Level 2) GSFC 429_99_02_03
srd64	**1.3 Definitions**
srd65	***Archive name*** *- The name under which a data set is stored in the CLASS archive. It may be different from the name that was originally created by the data provider.*
srd67	***Bulk Order -*** *For CLASS, a bulk order is one created automatically in accordance with user-defined search criteria. All data sets that match the search criteria are automatically submitted as part of the bulk order. Bulk orders are processed at low priority and are used for large volumes of data that cannot be ordered conveniently through the user interface.*
srd404	***Customer*** *- Individuals and organizations that receive data products directly from NOAA. NOAA makes data products available to the general public with exceptions specified in data access and distribution policies (e.g., OFAC and DoD restrictions, third party licenses and agreements, data denial during national crises, etc.).*
srd69	***Data set*** *- A data set is a collection of data that are ingested as a single unit. A data set may consist of one or more files that contain data and metadata, or it may consist of one or more related database tables.*
srd71	***Ingest*** *- To take in for storage, create an inventory entry and possibly, depending on the data type, extract and store data from which visualization products can be generated.*

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srd73	***Inventory Catalog*** *- A catalog that contains the unique description of all ingested data sets.*
srd75	***Large-array*** *- In the context of CLASS, large-array data refers to remotely-sensed environmental data from any of the campaigns that are included in this system (see Section 1.1).*
srd77	***High Availability*** *- For CLASS, high availability refers to duplicate capabilities on equivalent hardware and software systems at two separate sites with dedicated high volume bandwidth connections. CLASS must be operational 24x7.*
srd79	***Order Confirmation E-mail*** *- For CLASS, order confirmation e-mail refers to an e-mail sent to the customer when the order is completed. This e-mail generally contains instructions on how to retrieve the order.*
srd81	***Order Verification E-mail*** *- For CLASS, order verification e-mail refers to an e-mail sent to the customer after an order starts processing. This e-mail is generally the order manifest.*
srd83	***Subscription Order*** *- An order placed automatically for a newly ingested data set that meets user-defined criteria. These criteria, along with user identification and delivery instructions, constitute a subscription.*
srd85	***Visualization Products*** *- A visual representation of a data set. Some visualization products, generally produced from a sampling of the data, are used as an aid to data selection. Others are final products that can be used for analysis.*
srd87	***Visualization tools*** *- Tools that generate visualization products.*
srd89	**1.4 Degree of Compliance Required**
srd90	This section defines the words used in this document to express level of compliance.
srd91	***Shall*** *- Absolute compliance is required. Exceptions can be taken only by a deviation or waiver to the specification.*
srd93	***Preferred*** **or** ***should*** *- Use of an alternate must be justified.*
srd95	***May*** *- The developer's selection is acceptable.*
srd97	***Will*** *- This is a declaration by the client that some item or service will be available for use when needed.*
srd99	***And*** *- In conjunction with "shall" specifically means that all actions are closely related and not independent in the effect on the system design or performance.*

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srd101	**2 System Overview**
srd102	**2.1 Mission Overview**
srd103	The CLASS mission is to use existing organizations, systems and technology to develop and administer a system that will electronically archive and distribute large-array data from several campaigns. CLASS will be developed as an evolutionary system; its capabilities will be implemented over time depending on requirements and critical dates.
srd104	**2.2 System and Operations Concept**
srd105	The system provides life cycle capabilities for archiving, distribution, preservation, and operation such that all approved campaign array-data may be preserved as defined by existing National Archives and Records Administration (NARA) and NESDIS archive policies, and distributed as requested to customers and for disaster recovery. The scope of these capabilities includes the ability to scale system functionality to continuous growth in campaigns and the preservation needs of the data.
srd106	The capabilities and characteristics of CLASS are discussed in the Concept of Operations for the Archive, Access, and Distribution System of CLASS.
srd107	**2.3 System Functional Overview**
srd108	The following diagram, Figure 1, shows the external interfaces between CLASS and the data providers and customers. It also shows the internal functions of the system, grouped into the four categories: Operation, Archiving, Preservation, and Distribution.

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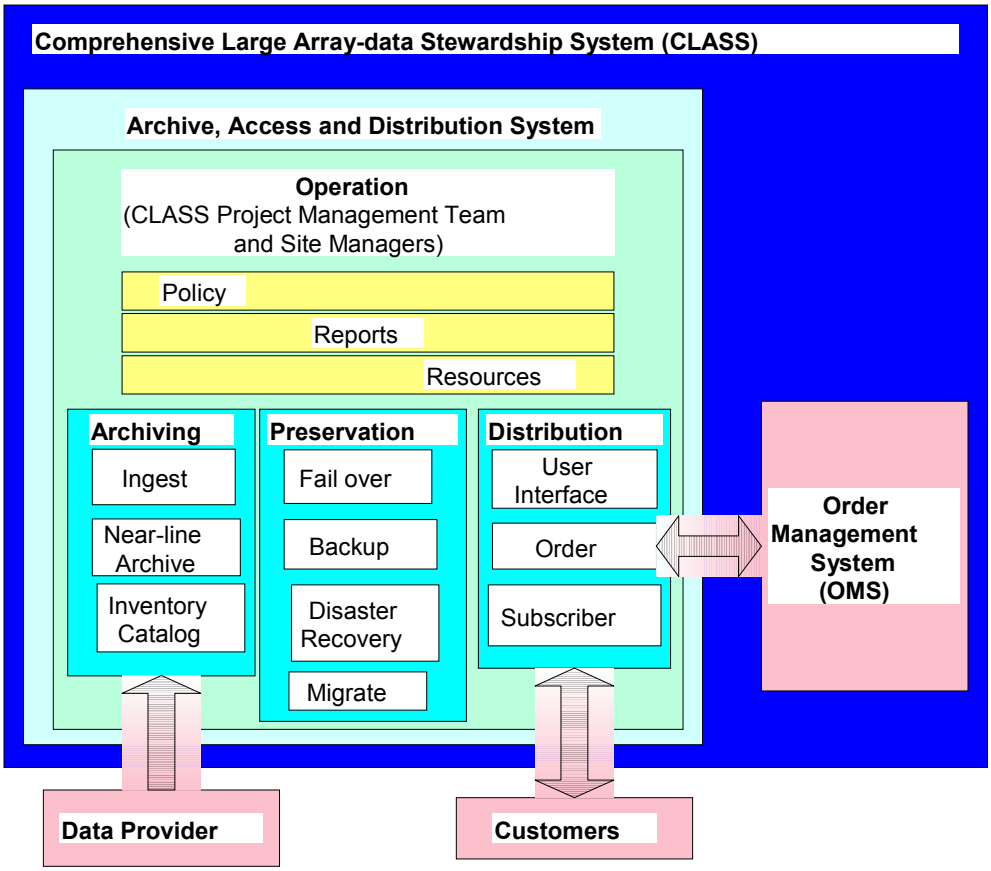
srd109	
srd110	Figure 1: Context Diagram
srd111	**2.3.1 Archive, Access and Distribution**
srd112	**2.3.1.1 Archiving**
srd113	Provides all aspects of receiving the data from data providers and making it available to the rest of the system.
srd114	**Ingest** - Ingest takes in the data from the data providers, develops or extracts descriptive data about the data set, and, in some cases, extracts and stores on-line data that can be used for visualization product generation. Ingest stores the descriptive data in the inventory catalog.
srd115	**Near-line archive -** The archived data set is stored in a robotics archive that allows for electronic retrieval.
srd116	**Inventory Catalog -** The inventory catalog contains data set entries that describe data sets archived in the near-line storage system. The inventory catalog is used to provide on-line real-time search services to customers.
srd123	**2.3.1.2 Distribution**

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srd124	Encompasses all components needed to make data sets available to the user community. The user community may include external systems, which provide additional services employing the data.
srd125	**User Interface** - The user interface provides customers with Internet access to the active archive services. The services provide for the ability to find the data, display data sets that match search criteria, view visualization products and order the data.
srd126	**Order** - Data sets and derivative products are received and delivered. Data products consist of data generated through any additional manipulation to a source data set. The data provider must require that the products be generated, and must provide the tools to perform the conversion. Generally, this function provides the assembly of orders and the generation and delivery of requested products.
srd127	**Subscriber** - Special services are provided to some customers. These customers have the ability to have subscription orders executed as the data enters the system, or the ability to place bulk orders for large amounts of data.
srd117	**2.3.1.3 Preservation**
srd118	Provides the abilities to keep the data over years and to maintain the quality of the data.
srd119	**Fail-over** - Fail-over provides the ability to switch between operational sites in the event that one site stops operation.
srd120	**Backup** - Backup provides duplication of the files between CLASS sites. Duplication of the archive provides a geographically distributed backup capability. Automatic background processes synchronize the archive content in both CLASS sites, and annotate the inventory catalog that the data set is stored in both archives.
srd121	**Disaster Recovery** - In the case of catastrophic failures, the geographically distant files are used to bring the system back up to the current operational state.
srd122	**Migrate** - Migration of data is necessary as the technology changes or the media ages. Migration operations provide long-term data consistency.
srd128	**2.3.1.4 Operation**
srd129	Defines policies and procedures, analyzes the system's performance, and allocates resources.
srd130	**Policy** - Policies and procedures must be set to define how system operations are conducted across all sites. The policies and procedures provide detailed guides and operational rules, which must be followed by site managers and operators.
srd131	**Reports** - Operational decisions require that statistics be provided in effective, clear reports for resource management, policy revisions, and for the extension of services to additional campaigns.
srd132	**Resources** - Resources are managed across the different operational sites, based on defined policies and procedures and system reports.
srd133	**2.3.2 Order Management**

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srd134	Provides the billing, accounting, and order tracking capabilities for applicable orders. The applicable orders include physical orders. This function manages all financial aspects of the system.
srd135	**Order Processing** - Provide the capability for the customer to pay at the time of placing an order or to have a prepaid account from which payment is deducted. Prepaid accounts are defined for individuals or organizations.
srd136	**Payment tracking** - Provides the capability to enter user-provided payment options, perform automatic credit card verification, and credit or debit accounts accordingly.
srd138	**Customer Data Processing** - Provides the capability to report financial information related to transaction processes and financial transactions, perform the receipt and transfer of credit card transactions, and produce required financial reports.
srd139	**2.4 External Interfaces**
srd140	There are six major external interfaces for the system.
srd141	1) Remote electronic data provider provides data files for ingest processing.
srd142	2) Customer accesses through a standard Internet interface.
srd400	3) Customer accesses help desk through e-mail
srd401	4) Customer receives delivery by electronic transfers.
srd402	5) The Archive, Access and Distribution System interfaces with the Order Management System for order authorization.
srd403	6) The Archive, Access and Distribution System interfaces with the Order Management System for media delivery.

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srd143	**3 System Requirements**
srd144	**3.1 Functional Requirements**
srd145	**3.1.1 Archive and Distribution Functional Requirements**
srd146	**3.1.1.1 Archiving**
srd147	**3.1.1.1.1 Ingest**
srd148	3.1.1.1.1.1 Data Set Receipt
srd149	The system shall receive data sets through electronic network transfer.
srd150	The system shall be able to pull data sets from provider hosts.
srd151	The system shall pull all data sets made available by the data provider for input into CLASS.
srd152	The system shall be able to accept data sets pushed from provider hosts.
srd153	The system shall determine that a data set is ready to be transferred from a data provider before attempting transfer. The criteria for defining that a data set is ready for transfer will be established by agreement between NESDIS and the data providers.
srd154	The system shall pull only data sets with names that conform to predefined patterns. The naming conventions for data sets received from data providers will be established by agreement between NESDIS and the data providers.
srd155	The system shall record the receipt of each data set for internal auditing.
srd156	The system shall be able to identify any number of files or tables as belonging to a single data set. The original names of files/tables belonging to the same data set will conform to a convention established by agreement between NESDIS and the data providers.
srd157	The system shall automatically notify the data provider when it determines that the integrity of a received data set is in question.
srd158	For data sets in which the integrity of the data was in question, upon receipt of notification from the data provider that the integrity issue has been resolved, the system shall receive and re-ingest the data set in question.
srd159	3.1.1.1.1.2 Data Set Processing
srd160	The system shall be able to process multiple data sets concurrently.
srd375	The system shall preprocess data sets as required. The file preprocessing requirements will be established by agreement between NESDIS and the data provider.
srd161	The system shall be able to receive and ingest a data set that has the same name as a data set already ingested. The action to be performed for such data sets will be defined by agreement between NESDIS and the data provider. Possible courses of actions are: (a) discard the new data set; (b) replace the previously ingested data set with the new data set; (c) give the new data set a unique name identifying it as a new version of the data set and ingest it.
srd162	The system shall rename each data set, regardless of provider, to a common naming convention for archive. This new name will be referred to as the data set's archive name.

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srd163	The system shall compute the checksum and or digital signature of each file that belongs to a data set.
srd164	The system shall characterize the quality of each data set using a method established by agreement between NESDIS and the data provider.
srd165	The system shall notify the data provider when it recognizes that a data set fails to meet pre-established quality criteria established for each data type by agreement between NESDIS and the data provider.
srd166	The system shall extract and store on-line data that can be used for generating visualization products. The types of visualization products that will be available for a given data type will be determined by agreement between NESDIS and the data provider.
srd167	**3.1.1.1.2 Inventory Catalog**
srd168	The system shall create a catalog entry for each data set that meets pre-established quality criteria. These criteria will be established for each type of data by agreement between NESDIS and the data provider.
srd169	The system shall assign a unique inventory identifier to each data set in the catalog.
srd170	The system shall store the data set's original name and the data set's assigned archive name in the inventory catalog.
srd171	The system shall store the date and time of ingest in the inventory catalog.
srd172	The system shall store the computed checksums or digital signature for all of a data set's file in the inventory catalog.
srd173	The system shall store descriptive data for a data set in the inventory catalog. The descriptive data stored for a given data type will be determined by agreement between NESDIS and the data provider.
srd174	The system shall store data describing each data set's temporal coverage in the inventory catalog.
srd175	The system shall store data describing each data set's geographic area of coverage in the inventory catalog.
srd176	The system shall store the size of a data set in the inventory catalog.
srd177	The system shall store quality metrics for each data set in the inventory catalog.
srd178	The inventory catalog shall identify the CLASS sites at which each data set is archived.
srd179	The system shall perform periodic verification that the inventory database matches the site archives.
srd180	**3.1.1.1.3 Near-line Archive**
srd181	The system shall archive every cataloged data set in local near-line storage.
srd182	**3.1.1.2 Distribution**
srd183	**3.1.1.2.1 User Interface**

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srd184	The system shall provide an interactive Internet user interface.
srd185	The system shall provide one interface through which customers may search for data in CLASS.
srd186	3.1.1.2.1.1 *Customer Registration and Customer Profile*
srd187	The system shall require a customer to register before allowing that customer to order data.
srd188	The system shall allow a customer to register interactively.
srd189	The system shall require a customer to provide a valid e-mail address before allowing the customer to register.
srd190	The system shall enable a customer to set up a customer profile. That profile shall contain default values for delivery and order notification options.
srd191	The system user interface shall provide a customer with the ability to modify his or her own profile.
srd192	The system shall require a customer to log in with a valid user ID and password before allowing that customer to order data.
srd193	3.1.1.2.1.2 *Security*
srd194	The system shall be able to restrict access to a given data set so that only designated users have access to that data set.
srd195	The user interface shall require the entry of a user ID and password for access to protected data.
srd196	3.1.1.2.1.3 *Search*
srd197	All cataloged data sets shall be available for search and distribution to approved customers.
srd198	Only cataloged data sets shall be available for search and distribution.
srd199	The system shall enable a customer to specify criteria for searching within the inventory.
srd200	The user interface shall allow for user specification of spatial search criteria through the interactive drawing of a region bounded by lines of constant latitude and longitude.
srd201	The user interface shall provide a customer with the option to save search criteria.
srd202	The user interface shall provide a customer with the option to reload search criteria.
srd203	The user interface shall enable a user to submit a search.
srd204	If a given data set does not have a value for a specific descriptive data item specified by the user as a search criteria, the system's search shall consider that criteria to have been met for that data set.
srd205	A customer shall be able to cancel his own active search.
srd206	The user interface shall enable a customer to view search results.
srd207	The user interface shall display search criteria concurrently with search results.
srd208	The system shall support the visualization of data sets. The types of visualization to be supported for each data type will be defined by agreement between NESDIS and the data provider.

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srd209	The visualization services shall be able to employ visualization tools that are identified by the data set providers. The functionality supported for each tool will be defined by agreement between NESDIS and the data provider.
srd210	3.1.1.2.1.4 *Order Submission*
srd211	The user interface shall provide a user with the ability to place an order that requests one or more data sets.
srd212	The user interface shall enable a customer to create an order containing data sets selected from multiple searches.
srd213	The customer shall have the option to associate comments to any specific data set in an order.
srd214	Before accepting an order, the system shall confirm a customer's ability to pay for the data in that order that are not being distributed free of charge.
srd215	The user interface shall display the order number to the customer as soon as the order is submitted.
srd216	The system shall provide order status information when requested.
srd217	3.1.1.2.1.5 *Customer Support*
srd218	The user interface shall provide on-line guidance, assistance and information.
srd219	The user interface shall provide on-line access to relevant documentation for archived data sets.
srd220	The system shall support an e-mail-based help desk to respond to customer inquiries.
srd221	**3.1.1.2.2 Order Processing**
srd222	3.1.1.2.2.1 *Customer Options*
srd223	The system shall provide the customer with the ability to select different delivery options for each data set. The available delivery options will be defined by agreement between NESDIS and the data provider.
srd224	The system shall provide the customer with the ability to choose between archive naming conventions and data provider naming conventions for the delivered data sets.
srd225	The system shall provide the customer with the ability to enable or disable order verification e-mails.
srd226	The system shall provide the customer with options to select the granularity of order confirmation e-mails. For example, a confirmation message may be sent for the entire order, for each line item, or for each block of line items (for bulk orders).
srd227	3.1.1.2.2.2 *Data Delivery*
srd228	The system shall process orders automatically.
srd376	The system shall process orders in accordance with user specified delivery Options.
srd229	The system shall process orders in accordance with their processing priority and age.
srd377	The system shall enforce Data-type specific limits for ordering data.
srd378	The system shall provide the customer with an order manifest.

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srd230	The system shall provide a network area to handle data delivery to customers.
srd231	On the network area, the system shall maintain order-fulfilling files for a limited time; such time will be configurable.
srd232	The system shall provide the ability to encrypt or use digital signatures with the order to verify integrity of data sets, as required by the data set provider or user.
srd233	The system shall automatically retry for a configurable number of times any system initiated data set transfer that failed.
srd235	The system shall verify the success of a system initiated data transfer by employing the capabilities of the selected electronic protocol. The verification method will be defined by NESDIS policies.
srd389	The system shall notify the customer when the ordered data are available.
srd236	If all attempts to push a data set fail, the system shall notify the customer of the reason for failure and provide the customer with instructions for pulling the data set.
srd237	The system shall notify the customer if an on-line order or portion of an order cannot be filled.
srd381	3.1.1.2.2.2.1 Security
srd384	When restricted access to data is required, the system shall provide an access mechanism to limit the delivery of that data to authorized users.
srd238	**3.1.1.2.3 Subscription and Bulk Order Services**
srd239	3.1.1.2.3.1 *Subscription Orders*
srd240	The system shall allow approved customers to define criteria for subscription orders. Allowable criteria will be defined by agreement between NESDIS and the data provider.
srd241	The system shall provide approved customers with the ability to edit and delete subscriptions.
srd242	The system shall allow approved customers to specify a single electronic delivery location for each subscription.
srd243	The system shall allow customers with subscription privileges to enable or disable delivery notification e-mails.
srd244	For each newly ingested data set, the system shall create an order in accordance with each applicable subscription, where an applicable subscription is one whose criteria are satisfied by the descriptive data of the data set.
srd245	The system shall assign subscription orders a default processing priority higher than the processing priority assigned to on-line orders.
srd246	3.1.1.2.3.2 *Bulk Orders*
srd247	The system shall enable approved customers to specify criteria for selecting data sets to be included in a bulk order.
srd248	The system shall allow customers with bulk order privileges to enable or disable delivery notification e-mails.
srd249	The system shall create a bulk order in accordance with user-specified criteria.

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srd250	The system shall estimate a delivery schedule for the completion of each bulk order and make this estimate available to the user.
srd391	The system shall fill and deliver each bulk order in accordance to the estimated delivery schedule for that bulk order.
srd251	The system shall assign bulk orders a default processing priority lower than the processing priority assigned to on-line orders.
srd252	**3.1.1.3 Preservation**
srd253	**3.1.1.3.1 Failover**
srd254	The system shall enable operators to switch between operational sites in the event that one site stops operation.
srd255	**3.1.1.3.2 Backup**
srd256	The system shall archive all data at two CLASS sites.
srd257	The system shall maintain a backup of the inventory database.
srd258	**3.1.1.3.3 Recovery**
srd259	The system shall be able to restore the inventory to the state it was in prior to a failure.
srd260	The system shall be able to transfer files electronically between sites to synchronize the archives at the two sites after a failure or loss of data at one site.
srd261	**3.1.1.3.4 Migration**
srd262	The system shall provide data migration capabilities.
srd263	**3.1.1.4 Operations Support**
srd264	**3.1.1.4.1 Report Generation**
srd265	3.1.1.4.1.1 *Log Messages*
srd266	Processing activities and errors shall be logged.
srd267	The system shall log all activities with sufficient detail to determine the start, the end, where the entry originated, and the result of the event.
srd268	The system log messages shall be organized into types.
srd269	The system shall electronically distribute selected log messages to designated operators.
srd270	3.1.1.4.1.2 *Statistics*
srd271	The system shall collect volumetric performance data for reporting.
srd272	The system shall collect resource utilization performance data for reporting.
srd273	The system shall store a customer's system utilization profile of orders and activities for reporting.
srd274	**3.1.1.4.2 Resource Management**

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srd275	3.1.1.4.2.1 *Disk Cache Maintenance*
srd276	The system operation shall perform periodic clean up of disk space automatically.
srd277	The system shall delete files from temporary storage after the files are no longer needed.
srd278	The system operation shall periodically monitor the data delivery logs and delete files that are no longer needed.
srd279	The system garbage collection of disk space shall be automatically triggered when available disk space is less than a configurable limit.
srd280	**3.1.2 Order Management Functional Requirements**
srd281	**3.1.2.1 Order Processing**
srd282	The system shall provide the capability to track order transaction status.
srd283	The system shall provide pricing based on customer retail or wholesale status and delivery media (i.e., on-line delivery, physical delivery).
srd284	The system shall automatically calculate Total Price, Mail, Handling and Special charges such as rush orders.
srd285	The system shall provide the capability to mark a transaction complete to print shipping documents.
srd286	The system shall be able to print shipping documents.
srd287	The system shall provide the capability to void orders and credit the account appropriately.
srd288	**3.1.2.2 Payment Tracking**
srd289	The system shall provide the capability to accept and process the following payment types: Cash Check Credit Card Prepaid Account Credit Line Data Exchange Free
srd297	The system shall provide authorized personnel the capability to transfer funds from one customer to another.
srd298	The system shall provide authorized personnel the capability to transfer funds from one order to another.
srd299	The system shall provide authorized personnel the capability to associate payments to a specific order.
srd300	The system shall provide authorized personnel the capability to produce refunds and returns.

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srd301	The system shall provide authorized personnel the capability to allow one payment to multiple order or accounts and allow multiple payments for one order or account.
srd302	The system shall provide authorized personnel the capability to produce and print an invoice when partial payment is received.
srd303	The system shall provide authorized personnel the capability to adjust the customer account balance.
srd304	The system shall provide authorized personnel the capability to provide summarized receipt and deposit information.
srd305	**3.1.2.3 Customer Data Processing**
srd306	The system shall provide authorized personnel the capability to merge data associated with two different customers.
srd307	The system shall provide authorized personnel the capability to format mailing labels in accordance with United States Postal Service (USPS) regulations.
srd308	**3.2 Performance Requirement**
srd309	**3.2.1 Archive and Distribution Performance Requirements**
srd310	**3.2.1.1 Archiving**
srd311	The ingest and archive processing shall be available 24x7 with 99.9 % reliability.
srd312	When the system detects a problem with the integrity of a received file, it shall notify the data provider within 45 minutes of the receipt of the file.
srd313	The system shall create an inventory catalog entry for each data set within a specified time of the receipt of that data set. This time limit will be specified by agreement between NESDIS and the data provider.
srd314	The system shall notify the data provider within a specified time of recognizing that a data set fails to meet pre-established quality criteria. This time limit will be established for each data type by agreement between NESDIS and the data provider.
srd315	The system shall archive every cataloged data set in local near-line storage within 4 hours of the ingest of the data set.
srd316	The system shall provide network hardware at each site that supports 150% of total daily ingest data for all sites combined.
srd317	The system shall report telecommunications problems to operations within 2 hours of detection.
srd398	**3.2.1.1.1 File Receipt**
srd234	The system shall enforce a time-out policy on system initiated file transfers.
srd318	**3.2.1.2 Distribution**
srd319	The user interface shall be available 24x7with 99.9 % reliability.

ID	CLASS System Requirements CAR
srd320	The system shall be capable of distributing at least 70 GB volume of data sets and products per day.
srd321	**3.2.1.3 Operations Support**
srd322	The system shall keep log files on-line for a configurable number of days.
srd323	**3.3 Operational Requirements**
srd324	**3.3.1 Operational Sites**
srd325	The system operation shall have two facilities that normally operate 24x7.
srd326	The system shall archive all data at two CLASS sites separated by more than 50 miles.
srd327	Each CLASS site shall be able to ingest and archive all data types.
srd328	The system shall follow disaster recovery procedures dictated by NESDIS policies.
srd329	**3.3.2 Human Factors**
srd330	The system shall comply with NOAA web site standards.
srd331	The system shall comply with Section 508 of the Rehabilitation Act.
srd332	The system's operators shall follow operational procedures dictated by NESDIS management.
srd333	**3.3.3 Monitoring and Control**
srd394	The system shall follow operational procedures dictated by NESDIS management.
srd334	The system operators shall be able to control all operational components of the system.
srd335	The system operators shall be able to monitor system status.
srd339	The system operators shall provide NESDIS management with data acquisition, data distribution, and system performance reports to facilitate planning for system growth.
srd343	The system operators shall be able to modify the inventory catalog in accordance with NESDIS policies.
srd344	**3.3.4 Data Maintenance and Migration**
srd345	The archived data sets shall be managed in accordance with standard NARA and NESDIS data archive management practices and procedures.
srd346	The system shall support data migration activities in accordance with NARA and NESDIS policies.
srd347	The data migration activities shall not interrupt normal system operations.
srd348	**3.3.5 Security**
srd349	The system operation shall be performed in an electronically secure network area.

ID	CLASS System Requirements CAR
srd350	The system shall adhere to NESDIS security policies.
srd351	The system operators shall be provided with the ability to deny data to specific customers by data type for a specific period of time.
srd352	The system operation shall provide secure access to customer information, for both the customer and approved customer service personnel.
srd353	The system shall comply with US Government regulations [e.g., NOAA, NARA, US Department of State] regarding distribution of US Government data.
srd354	The system shall comply with US Space Command and NOAA agreements regarding redistribution of Four Line Element ephemeris data.

ID	CLASS System Requirements CAR	
srd355	**4 Acronyms**	
srd356	24x7	Twenty-four hours by seven-days
srd424	ASOS	Automated Surface Observing System
srd357	CLASS	Comprehensive Large Array-data Stewardship System
srd409	DMSP	Defense Meteorological Satellite Program
srd431	EOS/MODIS	Earth Observing System/Modern Operations Distributed Infrared Spectrometer
srd408	GOES	Geostationary Operational Environmental Satellite
srd432	METOP	Meteorological Operational satellites
srd360	NARA	National Archive Records Administration
srd405	NASA	National Aeronautics and Space Administration
srd361	NESDIS	National Environmental Satellite, Data and Information Service
srd410	NEXRAD	NEXt Generation Weather Radar
srd362	NOAA	National Oceanic and Atmosphere Administration
srd434	NPOESS	National Polar-orbiting Operational Environmental Satellite System
srd435	NPP	NPOESS Preparatory Project
srd406	POES	Polar-orbiting Operational Environmental Satellite
srd416	SAA	Satellite Active Archive

srd428

5 Document Review History

Reviewer	Version	Signature	Date
Constantino Cremidis/CSC	1.0		01-Oct.-02
Alexander Kidd/OSDPD	1.0		01-Oct.-02
Geof Goodrum/NCDC	1.0		01-Oct.-02
Carlos Martinez/TMC	1.0		01-Oct.-02
Ted Habermann/NGDC	1.0		01-Oct.-02
Eric Kihn/NGDC	1.0		01-Oct.-02
David Vercelli/NESDIS	1.0		01-Oct.-02